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MALEVOLENCE IN THE LOWER ANIMALS.

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1. It must be admitted that there is need of great caution in attributing human emotions to the lower animals. It is an *a priori* possibility that the lower animals may be so entirely different from men that their psychical states may not resemble those of human beings in any one respect. Hamerton says: "The main difficulty in conceiving the mental states of animals, is that the moment we think of them as human, we are lost." But it is likewise an *a priori* possibility that John Smith may not have a single sensation or feeling or thought similar to any experienced by David Jones. If this possibility were a fact, there could be no language common to any race of mankind, no art or music or poetry common to all men, no education, government, philosophy or religion, and certainly no science of human psychology. But since all these things exist in a more or less perfect way, together with many other means of expressing mental states, there must be a great similarity between the mental conditions of the different individual members of the human race. Similarly, if the psychical states of the lower animals be entirely different from those of human beings, there can be no science of comparative psychology, for we never can conceive that which we have not ourselves experienced; there can be no scientific

principles for the training of animals, but merely a collection of empirical facts; in short, we cannot understand the lower animals at all, and had better cease to study them. But now there is such a thing as a scientific method for the training of animals, and that method is entirely built upon human analogies. Also the science of comparative psychology has established some facts, and this by reasoning according to human analogies. The entire doctrine of the expression of the emotions is valid only upon the supposition that the lower animals in many respects resemble human beings. The same supposition underlies all our dealings with our humble friends. When I tread on Fido's paw and he runs away howling and upon three legs, I reasonably conclude he must be suffering pain. When after a long day's hunt he ravenously attacks his dinner, I am apt to think him as hungry as myself. When on a hot day he rushes panting and with outstretched tongue to a pool of water, I believe him to be somewhat thirsty. Instead of saying,—the moment we think of these feelings as human we are lost, we must say, the moment we think of them as entirely different from human feelings we are lost. If, then, I admit that a dog possesses these and many other feelings analogous to my own, why should I refuse to admit that he may also possess the more intellectual feelings of joy, grief, anger, fear, affection, and the like, for which similar evidence can be adduced? The fact is, for practical purposes, I am obliged to admit this, and to regulate my intercourse with dogs as if they possessed these emotions. In this way we have the strongest possible confirmation of the theory, originally suggested by analogy, that the lower animals experience most, if not all, of the chief sensations and emotions that regulate the life of man. The very fact that it is possible for us to discover that some of these psychical states preponderate, while others are but slightly developed or not at all, only confirms the same hypothesis. It can hardly be doubted

that the sensations and feelings of the lower animals must in many respects differ from those of human beings. The sense of smell in dogs, and the homing instinct of pigeons are notable examples of this; and just because they are so different from any of our own experiences, is it impossible for us to understand them. It may safely be asserted that in so far as the psychical states of the lower animals are similar to our own, just so far are they intelligible to us. Thus can we fix the limits of any possible science of comparative psychology.

The conclusion that there is a certain similarity between the psychical life of the lower animals and that of human beings, is thus justified by analogy and experience, and is extremely probable, no matter what theory of origins we may adopt. To those, however, who hold that man is but the highest development of animal life in an ascending scale, the probability is, to say the least, greatly increased. Nevertheless in both cases the verification of the hypothesis is the same, and is to be found in the applicability of the theory to all our relations with the lower animals.

From this point of view, it is easy to see the importance of the study of the lower animals for the educators of the human infant. Wesley Mills asserts: "It is certain that the dog may be treated in all respects more as if he were a child than as bearing any close relationship to our other domestic animals." If this be true then surely our observations and experiments in the training of this animal at least will have some bearing upon the education of children. While it is true that all our education is in a sense experiment, the moral sentiment of society forbids in the case of children many experiments that might very properly be tried with dogs and monkeys. A refractory dog is very similar to an obstinate child, and methods that succeed or fail with the one are very likely to produce the same effect in the case of the other. Also the laws of heredity are very similar in all the higher animals, and here again, in the breeding of animals, is a wide field for experimental investigation, not without a bearing on the welfare of the human race.

The method to be followed in the study of the emotions of animals is undoubtedly connected with the physical expression of the emotions, according to the principle

that like causes produce like effects. In every case it is necessary to reason from the human point of view. In the case of the feelings connected with nutrition and reproduction and the other more physical activities, the inference is comparatively simple. Deprive a child of food for too long a time and it will express its hunger in words, contortions and cries. Under like circumstances a dog will show very similar signs of the pains of hunger, and we have every reason to think that he really experiences a feeling similar to our own. Even where, as in many animals, no evident complaint is made, the avidity with which they devour their food is sufficient evidence of a feeling corresponding to what we call hunger. In the case of the more intellectual emotion of anger, the inference is almost as obvious, especially where extreme anger or rage is present. In man, according to Darwin, the emotion of rage is accompanied by an "acceleration of the heart-action, the face reddens from the repeated return of the blood, or may become deadly pale. The respiration is laboured, the chest heaves and the dilated nostrils quiver. The whole body often trembles and the voice is affected; the teeth clenched or ground together; the muscular system often stimulated to violent action, the gestures represent more or less plainly the act of striking or fighting with an enemy." In normal cases, these expressions are only produced when some great provocation has been offered. How does a dog behave under similar circumstances? At first a vicious snarl and a low growl, as if to warn his enemy, then his entire body assumes the posture of attack, with hair erect, ears thrown back and every muscle in quivering tension, till with open mouth and loud fierce snarls and growls he rushes upon his assailant. No one can fail to see the essential resemblance between an enraged dog and a furious man, and when we consider the fact that the exciting cause is similar in both cases, it is scarcely possible not to assume the presence of a similar emotion. Although in the case of individual members of civilized races, certain peculiar and comparatively non-significant expressions of anger may be acquired, in all men, but especially in savages and children, as in the lower animals, the expression of anger is essentially connected with the act of defense or attack. The

entire body is placed in a posture of attack and threatening motions are made with the various weapons of defense. The savage and the child clench the first and even show the teeth as if about to bite; horned animals shake their horns; carnivorous animals show their teeth and claws. Those who closely observe men and animals can tell at a glance many different shades of emotion. Such a person learns to distinguish between accidental motions and those connected with anger or a desire to attack. The dog, which has probably learned to bark since his association with man, undoubtedly uses his voice to express many different kinds of emotion. There are distinct differences between the good-natured bark, the vicious bark and growl, the bark of joy, the bark of expectancy, the whine of grief and a number of other vocal expressions of emotion. A close observer can easily distinguish between a horse's flapping his ears to keep away flies, his turning his ears to listen, and his setting his ears back when about to kick. Similarly, there is every reason to think that animals understand the difference between intentional injury and mere play, and that the former is accompanied by angry feelings. This will be evident to anyone who has watched a couple of kittens or puppies at play. They will pretend to bite and strike with the paws and growl as if in anger, but the moment one is really hurt there is a sudden change in the temper of one or both, for a vicious snarl and a fierce bite soon show that anger has taken the place of good-feeling. There is thus reason to think that angry feelings as a rule accompany every intentional injury, and that therefore over tacts of violence in addition to the accompanying expressions of anger, may safely be taken to indicate a corresponding angry temper.

2. It may seem a waste of time to enquire whether or not anger is hereditary in the lower animals, yet such heredity is by no means so evident as may be supposed. We should expect to find anger developed to a far greater extent in carnivorous than in herbivorous animals, but such does not seem to be the case. There are no carnivorous animals more fierce than the hippopotamus or the wild buffalo, while among the smaller animals none are more ferocious than harvester-rat or even the common house-rat. On the other hand, some members of the fiercely

predatory cat-tribe, as the ounce, are noted for their comparatively mild disposition. The predominant hereditary emotion in the wild animals, with reference to man, would seem to be fear, and it is probably this emotion, rather than anger, that renders the taming of wild animals so difficult. As to the relation of wild animals to one another, it is difficult to determine whether any one species is less ferocious than another. Among the carnivora, the larger and stronger species prey upon the weaker and flee from others stronger than they. Anger towards the weak and fear of the stronger are thus the predominant emotions in the struggle for existence. The herbivora have no such reason for conflict and therefore ordinarily live in peace, but during the rutting season the males of nearly all, including horses, cattle, sheep and even rabbits and hares, will fight with one another as furiously as any beasts of prey. In self-defense, too, all animals at times show great courage and ferocity. Still, it will be admitted that certain species seem to possess a more irritable temper than others. Some would seem to possess a mild and affectionate temper and are thus capable of being made agreeable pets. Such are the dog, cat, rabbit, guinea-pig and many monkeys. Others like the mink, may be tamed, but always retain an uncertainty of temper that makes them dangerous pets. Others again, as the gorilla and wild-cat, it is almost impossible to tame, but whether anger or fear is the chief cause of this, it is difficult to discover. Darwin states that in cutting open an alligator's egg, the young animal, although blind, instantly laid hold of the finger and attempted to bite, and Dr. Davy relates a similar story of a young crocodile's raising itself into a posture of defense just as an old animal would have done. Here again it is difficult to decide whether fear or anger was the moving impulse.

When we come to domestic animals the influence of heredity seems to be more evident, probably because we know them better and have observed their peculiarities. Undoubtedly, because of the greater variety of circumstances, there is far more individuality among domestic animals than among their wild relations. It can also scarcely be doubted that domestication has profoundly modified the character of the dog, if not of all domestic animals. It seems to be admitted that among

horses vicious parents are almost sure to produce a vicious offspring. In regard to dogs, Wesley Mills says: "Glaring faults are almost sure to be reproduced, so that an animal of very pronounced defects in physical or psychical qualities should be rejected as a breeder; all the more so if these were known to exist in the more remote ancestors." Dr. Wesley Mills, of Montreal, and Mr. Bernard Waters, of Chicago, have been so kind as to send me answers to the following questions bearing upon the heredity of bad temper in dogs:

1. Is bad temper hereditary?
2. Is training or environment of greater importance than heredity in determining the good or bad temper of a dog?
3. Are good and bad temper respectively characteristic of any particular breeds of dogs?
4. What is the proper method to employ in overcoming hereditary bad temper in a puppy?
5. What sort of treatment is calculated to spoil the temper of the puppy?
6. Do the answers to questions 1 and 2 apply also in the case of horses?

Dr. Mills replies as follows:

1. I am satisfied that any trait may be hereditary, bad and good temper included. I would hesitate to breed from a bad-tempered dog of either sex, no matter how excellent a specimen otherwise, especially if of a larger breed, as being more dangerous to man and his canine companions.

2. Heredity, I believe, *by far* the stronger.

3. No; though it occurs more frequently among certain breeds, perhaps. A bad-tempered setter or spaniel is rare. Bad temper may be said to be much more common in certain breeds than in others, rare in some, but absolutely confined to none.

4. Furnish an environment free from temptation and encourage a sense of justice—for dogs have this in a fashion at all events—from the first. Give him little chance to quarrel, but insist on his realizing that if he does it willingly, punishment of some kind—not necessarily corporal—will follow. I have found separation sometimes a severe punishment for dogs. They seem to know in some measure what it means. Disapprobation, scolding, is severe punishment for some dogs.

5. Teasing, hard usage, over-punishment, injustice, &c. Highly bred dogs especially suffer much psychically under bad usage, especially punishment in anger and to excess.

6. Yes.

Mr. Waters sends the following replies:

1. It sometimes is; not often. Bad temper, or rather *capability* of bad temper is in most cases acquired. But few dogs are so fortunate as to go through life without being maliciously teased or abused. Certain actions, looks, or people are associated with mal-treatment or pain. Even when in ill temper, dogs oftenest merely make a pretence of biting, if they make any effort at all. All dogs have more or less *latent* ill temper, the same as human beings. They are usually good-tempered. I never saw a dog ill-tempered from pure wantonness. Of course, heredity asserts itself in the disposition as in all other phenomena of the organism; but I never saw a dog born with an active ill temper.

2. Training and environment have everything to do with it. There is no dog but can be made ill-tempered by improper treatment. No dog is ill-tempered but kind treatment will cure it.

3. Some breeds are more courageous than others. Bull-terriers, fox-terriers, other terriers and some other breeds are quarrelsome among themselves, not necessarily from ill temper. Towards their master or acquaintances they may be affection personified if kindly treated. If pain is inflicted the instinct of self-preservation prompts a defense.

4. Kindness. I never saw a naturally ill-tempered puppy. I do not consider that a display of anger at ill treatment or teasing is ill temper. Kindness quickly dispels ill-temper in a dog which has had good raising.

5. The same which would spoil the temper of a human being. Confinement, punishment, teasing maliciously, insufficient food and inflicting pain wantonly and constantly. However, a dog is very forgiving, and will forget a lot of previous abuse if treated kindly. He will resent any attack on his master sooner than if offered to himself. Cowardly dogs often show great fortitude in defense of those they love. Apparent ill-temper is sometimes only a manifestation of jealousy. Some dogs are so attached to those they

love that they resent the approach of strangers. This is apt to become habitual if the master shows the slightest approbation of it. If their love is not recognized, or a rival dog is shown more favor, the defeated dog often shows dejection and grief, sometimes going in hiding to mourn alone.

6. These answers do not apply to horses. Horses are not so affectionate as dogs. Some colts show malicious ill-temper from birth.

Professor Willis Boughton, of the Ohio University, has kindly furnished me with answers to the same questions in regard to *horses*—reading *horse* or *colt* instead of *dog* or *puppy*:

1. I believe that it is especially from the dam. I knew three colts sired by the same horse and foaled by the same dam. The sire was a gentle, though proud and spirited horse, the dam was unmanageable in harness and under saddle, though not vicious. At three years of age the oldest colt was so vicious as to attempt to drive his master out of the stable; he would kick, bite and strike. Though he was worked, he was always ugly and vicious. The second colt was a powerful animal, and was vicious from the first handling until his death. He would bite, strike and kick, throw himself in the harness and try to run away. The third colt when caught for training, kicked one man in the breast and nearly killed him. When the attempt was made to break him, he threw himself and broke his neck.

2. A vicious temper may be cultivated.

3. I have heard that some breeds are bad tempered. A horse highly fed, kindly handled and properly exercised, is not usually bad-tempered. I have passed freely among herds of fifty horses of all ages and breeds; when they did not fear me, or when they were able to keep beyond my reach, there were seldom any signs of bad temper. Self-defense is strong in an animal, and may be taken for bad temper.

4. Physical mastery without abuse, for instance, Rarey's method: The horse is thrown by the use of the Rarey-cord and straps, and can be held down by holding his head up. He is held down until he indicates that he has given up; he does that by permitting the man to bend his legs. All that I have known were thus subdued; few were cured; usually they were vicious still.

5. Treachery, plaguing, ill temper and abuse on the part of the master. It will be seen from the above answers that the disposition of horses is very different from that of dogs. May this not be largely due to the fact that horses are seldom treated as pets, while the dog has been for thousands of years intimately associated with the family life of man? Also the consciousness of strength probably renders the horse more intractable, as does also the emotion of fear, which is its predominant emotion.

If we ask in what manner does hereditary malevolence exist in animals, it may be answered, probably in an entirely latent form. Physiologically considered, the nerves may be said to possess a certain kind of irritability which is manifested only upon stimulation. In the case of a naturally bad-tempered animal the reaction is quick and powerful. So also, psychically considered, bad temper is latent, and only manifested upon provocation, great or slight, as the case may be. A really bad-tempered animal will become angry at the slightest provocation, while a good-tempered animal will endure a vast amount of wanton injury before turning on his persecutor. It is therefore rather the capability of becoming angry—the irritable temper—that is inherited, and not the anger itself. Perhaps even without direct provocation the latent malevolence may manifest itself in a vague restfulness or impulse, just as a person of irritable nerves shows signs of such irritability before actual stimulation takes place, but this vague impulse is not anger, properly speaking, until upon provocation it has taken a definite direction and acquired a definite object.

Not only, therefore, is malevolence an hereditary tendency, but also an acquired impulse. It may be considered to be distinctly manifested whenever a conflict occurs or is likely to occur between animals. A whale that swallows a multitude of small fishes, a bird that devours a moth, or a cat that eats a tiny mouse, can scarcely be thought to entertain feelings of anger against their contemptible prey; but a whale attacked by orcas, a swallow whose nest is threatened by a hawk, a cat in conflict with a monstrous rat or another cat, all these show evident signs of extreme anger. Thus Spinoza appears to have rightly defined hate, in terms that really apply to all anger, as pain accom-

panied by the consciousness of its external cause. In every case there would appear to be a greater or less amount of pain of some kind, or at least a painful effort. Something is in every case desired, a resistance is offered, and anger may be considered as the emotion which naturally accompanies a summation of energy to overcome the obstacle. If the obstacle be overcome, the pleasures of malevolence ensue; if, on the other hand the obstacle prove too great, grief may follow, or fear, when danger is apprehended. Thus, according to the various circumstances, various emotions are developed. It is, therefore, now in order to consider some of the circumstances which appear to be the causes or occasions of malevolent emotions in the lower animals.

These are chiefly two,—those connected with obtaining food and those connected with reproduction. The former are the chief causes of conflict between different species and the latter occasions conflict between the members of the same species. The carnivora are responsible for nearly all the conflict and carnage that is inseparably connected with animal life. The weaker animals generally flee from their enemies, but even these, as is well known, exhibit extraordinary ferocity when brought to bay. In the chase, predatory animals frequently meet with others as strong or stronger than they, and then ensue those terrible battles that travelers relate. Lockington states that the grizzly bear has sometimes been found killed by a panther, but a panther has never been found killed by a grizzly. The same author says with regard to the weasel,—“The common weasel has sometimes been caught and carried off by raptorial birds, the hawks and kites, but sorrow be to the captor in such cases. He has caught a little Tartar; for the little captive has bitten into the side of the enemy, so that both have fallen to the earth, the bird mortally wounded, and the little quondam prey comparatively unhurt.” Perhaps the necessity for self-defense may explain why the malevolent emotions form so important a part of the life of all animals, whether carnivorous or not. Thus races naturally inclined to peace may have become most fierce and warlike. In regard to the harvester-rat, Romanes quotes Thompson’s ‘Passions of Animals’ thus,—“It seems to have no other passion than that of rage, which induces it to attack

every animal that comes in its way, without in the least attending to the superior strength of its enemy. Ignorant of the art of saving itself by flight, rather than yield, it will allow itself to be beaten to pieces with a stick. If it seizes a man’s hand it must be killed before it will quit its hold. It even makes war against its own species. When two harvesterers meet they never fail to attack each other and the stronger always devours the weaker.” Not only to obtain food do animals attack their fellows, but sometimes for the purpose of stealing their neighbour’s property. The slave-making ants are noted marauders of this sort. The direct object is not food but slaves, and they steal the pupae of the working-ant, which they hatch, and thus secure a colony of slaves. As is well-known, furious battles often take place on these occasions and great ferocity is exhibited on both sides.

The second class of causes of conflict is connected with reproduction and the protection of offspring. During the rutting season the males of most animals engage in furious conflicts for the possession of the females. These conflicts have been observed among horses, cattle, deer, elephants, dogs, cats, rabbits, squirrels, seals, salmon, pigeons and many other animals of otherwise mild disposition. Jealousy is the moving cause and the amount of passion developed is undoubtedly very great. Any one who has seen two full-grown cats fighting will be convinced of this. Also in the defense of their young most animals become exceedingly brave. We need only cite the cases of the hen and her chickens, the bear and her cubs, to make it evident that anger is an important factor in this sort of self-defense. Here again, as in the case of jealousy, there is a felt pain accompanied by a perception of its cause, and anger and violence are the natural results.

Besides these chief causes of malevolence in animals, there are others that more or less directly produce the same effects. As there is such a thing as hereditary fear, so perhaps antipathy towards strange animals and things may be in part hereditary. Animals of the male sex seem to develop anger more readily than females, a fact undoubtedly connected with the greater strength and vigor of male animals, and, as in the case of deer, with the greater development of offensive

weapons. Unkind treatment by men or animals is apt to develop chronic ill temper in the victim. Rogue-elephants are conspicuous examples of animals driven from their fellows, who become extremely ill-tempered, and seem desirous of wreaking their vengeance on all the animal kingdom. Solitary bison and deer show a similar ill temper, evidently the product of a similar bad treatment on the part of their stronger fellows. That animals revenge injuries, even after a considerable time has elapsed, can scarcely be doubted. Several reliable stories are told of elephants having revenged themselves on their persecutors. Romanes relates two remarkable stories of the revenge of storks. One of these is as follows: "A similar occurrence took place on the premises of a farmer near Hamburg, who kept a tame stork, and, having caught another, thought to make it a companion for the one in his possession. But the two were no sooner brought together than the tame one fell upon the other, and beat him so severely that he made his escape from the place. About four months afterwards, however, the defeated stork returned with three others, who all made a combined attack upon the tame one and killed him." Similarly horses and dogs and cats and other animals undoubtedly entertain antipathies towards those who have injured them. Jealousy, other than sexual, seems also to belong to the lower animals. Romanes says: "Of jealousy in dogs innumerable instances might be given," and this jealousy often takes the form of revenge towards the cause of it. Almost all students of dog nature agree with Elzear Blaze that "the dog is essentially jealous." Unkind and unfair treatment of animals by men, has the effect of rendering them chronically ill-tempered. It is partly for this reason and partly, perhaps, because of the fact that animals possess the tendency to imitate, that quarrelsome people generally possess ill-tempered dogs. "Like master, like dog." On the other hand, people of kindly manners are generally found surrounded by animals of like disposition, showing that environment exerts a power equal if not superior to that of heredity. Ill health is frequently the cause of bad temper in animals as well as in men. Yet it is well known that animals will often endure severe surgical operations without resentment, as if con-

scious of the good intention of the operator. The effect of alcoholic liquor upon the lower animals is much the same as in the case of men. Some it renders maudlin and stupid; others become wild and furious. As we have seen, it is scarcely possible to state that different kinds of ordinary food have any special effect upon the temper. If carnivorous animals are more vicious than others, it is probably due to their predatory mode of life, rather than to their diet of flesh. The reason why a well fed horse appears to be more vicious than a half starved one, must be that he possesses a surplus of nervous and muscular energy and thus reacts more vigorously to the provoking stimulus. Some animals seem to take a positive pleasure in slaughter. A weasel will often slay a whole flock of chickens, and an ermine has been known to kill an immense number of rats and afterwards pile them in a heap. This may be compared with the blood-thirsty pleasure in slaughter that history records of many rulers and warriors. It is a question whether the pleasure arises from the mere gratification of the malevolent emotions or from the hunting instinct and the love of power. Probably all three elements enter into the pleasures of malevolence, together with a sense of freedom from impending danger.

4. If we now consider the malevolent emotions from the point of view of their effects, we shall find that they have an important function to perform in the preservation of species. In reproduction we find the end attained by the passion of jealousy and by the mother's defense of her young. In the conflicts which occur between the males during the rutting season, the most vigorous are usually the victors, and only these reproduce their species, thus in a large measure securing the general vigor of the race. Of deer Prof. Ramsay Wright says,—"The closest connection is to be observed between the antlers and the reproductive function, as the antlers are employed in combat between the males, and the successful males are generally those which have just obtained their full size, the snags in these being sharper than they are in the older bucks." Frequently the older and weaker males are not only excluded from reproduction, but are driven from the herd, and as in the case of elephants and bison, become exceedingly ferocious. Their

malevolent emotions drive them to attack other animals as well as man, and in their solitary condition they soon fall a prey to their many enemies. Thus it would seem that malevolence, when it tends towards preservation of the species, also preserves the individual, but when opposed to the interests of the species, secures the destruction of the individual. Maternal affection is the cause of the malevolent emotions displayed by females in the defense of their young. Not only against her natural enemies, but often against the male parent must the female protect her young. Here the malevolent emotions, or perhaps rather merely the hunger, of the males would tend to the destruction of the species, if not opposed by the cunning and strength of the females. In the relations of different species to one another, anger and fear are the chief emotions that have to do with the preservation of species. Here it is evident that anger and fear are only different developments of the feeling or anticipation of pain from a known cause. A hare will be seized with panic at the sight of a fox, but will fight with the greatest fury against another hare. In the one case the danger can only be avoided by flight or concealment, in the other, resistance may secure freedom from annoyance. It is said that an elephant will flee in terror from a gad-fly, while he will advance boldly against the tiger. That anger and fear may both be present at the same time cannot be doubted, but it is the predominant emotion that rules the conduct. With regard to stronger enemies, the safety of the individual is secured by fear, while anger and the consequent conflict may secure immunity from the attacks of equals or inferiors. It might then be expected that in the end, only the strongest and most ferocious species would survive, but other circumstances modify this tendency. In the same woods are found the bear, the wolf, the fox, the deer, the hare, the porcupine and many other animals of unequal strength. But although the bear is stronger than the wolf, he is not so fleet, and although wolves hunt in packs, they seem to fear and avoid so powerful an adversary as the bear. Deer and hares save themselves by flight and cunning, porcupines have protective spines and convenient burrows, and the weak of every kind exert all the intelligence they possess in avoiding their enemies as well as in secur-

ing their own food. Thus, the forest must not be thought of as an enclosed arena where fierce conflict goes on until one monstrous cannibal alone survives, but as a wide domain, where skill and strength and instinct and emotion and various modes of life all combine to destroy or to keep alive. Malevolent emotion is but one of these factors, although a factor of no slight importance.

5. It remains now to notice the methods that may be employed for the suppression of malevolence in those of the lower animals with which we have much to do. In illustration of these methods we take the training of the dog. It is not considered wise to breed from dogs that show pronounced ill-temper, for there is always the possibility, and according to some, an extreme probability that the ill-temper will be inherited by the offspring. Training should begin when the dog is young, for even though it may not have inherited ill-temper, it is readily acquired, and it is difficult "to teach an old dog new tricks." A puppy is naturally playful and kind, and this disposition may be perpetuated by proper treatment. There will then be two sets of rules for the attainment of our purpose, the one negative and the other positive. After our discussion of the causes of ill-temper in animals, it must be evident that these causes must be excluded, if we would avoid their effects. In the domestic state it is no longer necessary for dogs to secure their food by the chase, and careful feeding at home does much to prevent vagabond and quarrelsome habits. As a natural result of their entire training, fox-hounds have been known to destroy their keepers, and it is never safe for a stranger to enter their kennels. All fighting, from whatever cause, must be prevented; also provocation and teasing must, by all means, be avoided. Too severe punishment or unjust treatment of any kind is apt to spoil a dog's temper, as well as the petting of one to the exclusion of another. In general, all unpleasant associations with men and things must be avoided. Of positive rules may be mentioned the necessity, on the part of the master, of keeping on good terms with the dog. The greater the number of pleasant associations connected with the master, the greater will be the affection of the dog for him. A good understanding is the basis of all right training whether of men

or animals. It secures attention and a desire to obey for the purpose of pleasing the teacher. Obedience must be insisted upon, and, if necessary, enforced by the use of punishment. Corporal punishment is not suited to the overcoming of bad temper, but is likely to increase it. Reproofing words, withdrawal of favor and privileges, and, if necessary, confinement and deprivation of food are far more efficacious. It is well known that many dogs are exceedingly sensitive to the least harsh word from their master. As judicious punishments deter from bad habits, so carefully bestowed rewards tend to the establishment of good temper. Kindness is one of the most powerful instruments of right training. As association with quarrelsome men or animals produces a similar disposition in a dog, so association with people of refinement undoubtedly has a refining effect. Thus a dog kept in a kennel can never attain the same degree of culture and good manners as one who is allowed to associate with the family of his master. In general, a dog may and ought to be treated as an intelligent animal, and careful training upon that principle will be rewarded with the best results. Of course, the training must vary according to the end in view. Two puppies from the same litter may develop into two vastly different dogs; if, for example, the one falls into the hands of a master who trains him to fight and the other become the petted favorite of the drawing-room. Heredity is by no means the all-important factor in the mental development of either dogs or men. Many are the variations in disposition that may be produced by careful training. A dog may be most indulgent and kind towards the members of his master's family, and yet very barbarous towards every stranger that ventures near the house, or he may be taught to confine his attacks to beggars and tramps. It would certainly not be wise to suppress all temper in a watch-dog, and it is a problem in the training of dogs and men, as to how far we can go in the suppression of the malevolent emotions without impairing courage and energy and the exercise of a wise resentment on proper occasions.

Because of the lack of distinctively moral motives and a sufficiently discriminating intelligence, the results obtained with the lower animals are of necessity crude and unsatisfactory, but they are not

without their bearing on the education of the human race. So far as they go, the methods that are successful in the case of the lower animals are found to be also successful in the education of the human infant. This fact goes far to establish the hypothesis with which we started that in their main features there is much similarity between the intellectual and emotional life of man, and of the higher mammals.

Editorial Notes.

In the course of last year the University issued three monographs entitled respectively:

Methods of Inducing Introspective Power; One Aspect of the Pedagogics of Psychology. By W. F. Peirce.

Some Aspects of Early Greek Education. By Chas. W. Super.

Ohio and the Training of Teachers. By J. P. Gordy.

More recently it has been found advisable to publish quarterly bulletins, each containing the discussion of some special subject, together with such additional matter as might be interesting to the alumni and friends of the institution. The first number appears herewith. The subscription price will be fifty cents per year. It is earnestly desired that all former students to whom this number is sent will forward the subscription price promptly. It will be seen that the size and character of the present faculty, as given on another page, is a sufficient guarantee that there will be no difficulty in making the bulletin a permanent record of the work of the University. Already enough papers are on hand and promised to fill four issues. Not only will the regular faculty contribute but persons who have been the recipients of degrees have likewise promised their cooperation. The editors hope not merely to make the Bulletin a regular medium of communication with the alumni, but likewise with other persons whether college graduates or not, who are interested in the discussion of such questions as may be presented in its pages.

THE University will hereafter require a term's work in pedagogy of all the members of the Freshman class. This course has been decided on for three reasons: (1) Because of the value of the subject to students; (2) because of its value to parents, and (3) because of its value to American citizens.

No one familiar with college students will assert that they determine what subjects they will elect so far as they have the privilege of election by means of any well-defined educational principles. They know nothing about educational principles. Their most definite notion of education often is that it is something that will help them to get on in the world. Of education as consisting in the harmonious development of all the powers of the mind and of the man, of the fitness of the various studies they pursue to occasion this development, of the value of a good, liberal education as the foundation for the best professional education, of all these things the average college student has very confused ideas. The result is that he either studies the subjects that do not particularly attract him in a half-hearted, perfunctory way, or leaves college when his course is half finished to prepare for his profession. We hold to the theory that a student is a human being; that being a human being, the way to get the most intelligent work out of him is to appeal to his intelligence; that to induce him to prosecute his studies in an intelligent way, to choose his lines of work under the guidance of their educational value rather than that of his untrained caprice, to see the relation between liberal and professional education in its true light, it is important, indeed essential, to make the study of education a part of his required work.

That the study of education would be of great benefit to the parent is too nearly self evident to admit of much discussion. It is fast becoming an axiom among educators that the teacher requires profes-

sional training as much as the doctor, that to say that the doctor requires professional training and deny it of the teacher is to put the body above the mind. But is not the parent a teacher? Is he not the only teacher of the child precisely in that period of his life when his brain is most plastic and the impressions made upon it are most lasting?

It has been said again and again that we spend more money for education and have poorer schools than any other nation in the civilized world. What is the reason for it? A part of the reason certainly is found in the fact that the public does not know what a good school is. Public opinion, in the matter of education as in all other matters, follows its leaders, and the leaders of public opinion, the lawyers and doctors, the professional men generally, are almost as ignorant as to what constitutes a good school system as the rank and file. The result is that really good work in a superintendent so far from increasing his prospects of promotion, often injures them. And of the best superintendents it can be truthfully said that they do not give the people they serve the best systems of education that their professional knowledge and zeal make possible, but the best that public opinion permits. How to educate public opinion, how to make it realize that the superintendent of the schools of a city exercises a greater influence over the rising generation than any other man in it, how to make it understand that his duties require an amount of natural ability and a degree of general and special training of a very high order, is a question second in importance to none before the educators of this country today. This University contends that it is a step in the right direction at least to get hold of those who are to be the leaders of public opinion in a few years. Win over the leaders of public opinion and the whole position is won.

As to the propriety of requiring so

difficult a subject in the Freshman year, and that, too, a subject so closely and vitally connected with psychology, we admit that we feel some doubts. We have determined to try it because we wish our students to feel its helpful effects from the very beginning of their college course. If, however, experience shall prove that it cannot be advantageously studied so low down in the course, we shall hearken to it, though with acknowledged reluctance, believing as we do that the light it is capable of throwing on a student's work may exert a powerful influence upon his habits of study.

A BRIEF inspection of the record of the University during the past few years gives evidence of prosperity and rapid growth. The teaching body is three times as large as it was several years ago; and the increase in the number of students has been equally rapid. From '81 to '90 inclusive, there were fifty-one graduates, while the last three classes numbered forty-nine. The class of '87 contained but two members. During the last half dozen years there has been an additional class sent out from the normal department numbering from four to ten members. And there are no technical or professional courses except that for teachers, which leads to the degree of Bachelor of Pedagogy. It is especially in this direction that we look for continued growth. We are aware that the size of an educational institution is a very unsafe test of its intrinsic merits. It can not be relied on in our country or in any other. But numerical growth may keep pace with intellectual advancement or vice versa. We feel safe in saying that in the O. U. they have gone hand in hand. The best evidence of this is found in the rapid advancement of our recent graduates in competition with those of other colleges. Under the present management there is no danger that the requirement of pro-

ficiency will be abated in order to increase the attendance. We are now close upon the full capacity of our buildings.

THE faculty of the University find no little satisfaction in the reflection that its governing board has never conferred the degree of Doctor of Philosophy as a mere honor. All who have thus far received it are men whose standing among their peers needs no defense, and whose record for scientific attainments is *prima facie* justification of the action of the Trustees. The present faculty is strongly of the opinion that this degree above all others should have a clearly recognized and easily discoverable value in every case, and that it should not be obtainable by any process of cram or be given as a recognition of a good reputation and high character only. Nor should it be given as a reward for a successful career in the teacher's profession, however worthy the cause. Whether it is wise in any particular case to follow a German custom depends upon circumstances, but we believe that so far as the degree of Ph. D. is concerned they have an excellent method. Not a very large proportion of the teachers in the public schools and comparatively few of the active clergy are holders of this degree. It is generally assumed that their duties in most cases prevent them from devoting themselves to the work of research, and that this especially the province of the University. It is to those who have demonstrated their ability to increase the world's stock of knowledge in however slight a measure that this degree belongs as a badge of honor. That they have been or are likely to become successful teachers is a consideration not taken into account.

IT is sometimes contended that the only way to make the abuse of the degree of Ph. D. well nigh impossible is to require the candidate in every instance to pre-

sent a thesis and submit to an examination. This is well so far as it goes, but it will not go far. To make the additional requirement that the thesis be published in every case will come far short of making an approximately uniform standard among our degree-conferring institutions. It is not an overstatement to say that the faculties in the Union are neither few nor far between of which not a single member has ever done any original work. What is the value of their judgment in a given case? Manifestly nothing. It is well known that some exceedingly weak theses are abroad in the land, representing the work of successful candidates. In view of the fact that these papers bear the endorsement of the faculties passing on them, there is little probability that any one will take the trouble to expose their weakness publicly. The wisdom of forbearance is plain. It is, however, gratifying to know that the general public attaches very little importance to degrees of any kind, and that the small body of discriminative judges look carefully to their source. The misfortune of this situation is that a competent man will now and then be found in very unworthy company and he relegated to the rear without investigation.

IT has by this time become pretty well known to the friends of the University, that the late W. D. Emerson of the class of '33 bequeathed to its governing board the sum of \$1000 as a permanent endowment, with a proviso that the interest be given every second year to the student or graduate who shall write the best poem. The interest became available for the first time this year. Some eight or ten productions were submitted to the committee of award. They found that about half a dozen of them were above the ordinary average of this kind of compositions. The two standing highest were found so nearly equal that it was no easy matter to decide in whose favor the scales ought

finally to turn. As the fund yields \$65 a year, it is well worth competing for. It is not often that a short poem is so well paid. It is especially gratifying to the Faculty that some of the undergraduate productions were equal to the best submitted. For whatever one may think of the policy of encouraging verse-writing, there is no doubt that it affords excellent practice in the use of language. Nor is it to be discouraged on any grounds, provided those who engage in it, do not too soon come to imagine that because they can write lines that will scan easily and read smoothly they are therefore poets and have no further need of study. No doubt poets are born, but they are born with very varying degrees of ability, and few indeed are they who cannot by careful attention to thought and composition continue to improve indefinitely. The time is long past when any writer can depend on inspiration alone.

Personal Notes.

ONE of the Doctors of Philosophy of the current year is Professor William A. Merrill. He graduated B. A. at Amherst in '80, receiving the Master's degree in '84. He is the author of a number of papers bearing on classical philology, several of which are published in abstract in the *Proceedings of the American Philosophical Association*. Among them are:

On Alliteration in Lucretius. This is a particularly valuable paper and exhibits a profound study of this ancient writer.

On the Lucretian word "Natura."

Sanctii Minerva and Ancient Spanish Philosophy.

An Introduction to a projected edition of Cicero De Legibus.

Dr. Merrill is admitted to be one of the ablest scholars in this country, and has recently been elected to the chair of Latin in the Indiana University. As a parting salutation, the Trustees of Miami University, under whom he held the chair of Latin since 1888, conferred on him the honorary degree of L. H. D.

ANOTHER is Wilbur M. Stine. Mr. Stine graduated at Dickinson College in '86, taking highest honors in science. During part of his college course he was employed as Tutor in Chemistry. From '86 to '89 he was Assistant Professor of Chemistry and Physics in the O. U., and from '87 until '93, Professor of Physics and Chemistry in the same institution, to which that of Electrical Engineering was added in '92. He is the designer of a new form of carbon battery and has made exhaustive tests on non-magnetic watches. He is a member of the Franklin Institute of Philadelphia, and of the American Association for the Advancement of Science. He has contributed a number of papers to Science, Popular Science News, The Electrical Review, The Electrical Engineer, The Scientific American, etc. Last spring he was elected to the head of the department of Electrical Engineering in the Armour Institute, and made one of the World's Fair Jurors on electrical exhibits.

ANOTHER is Mr. Charles Platt, of Buffalo. He was graduated from Lehigh University in '90, with the degree of Analytical Chemist. Shortly afterward he was appointed chief chemist in the laboratory of Thos. A. Edison, and later was employed as Director in that of Dr. Vandenburgh, in Buffalo, N. Y. He has published a number of articles in Science, of which he has also recently become Chemical Editor, on Oxide Films on Iron Wire, The Impurity of Ice, Solid Glycerine, etc. Other articles by him have appeared in the Journal of Applied Chemistry, The Engineering and Mining Journal, Annals of Hygiene, and elsewhere. He is likewise the author of a Treatise on the Electrolysis and Electro-metallurgy of Zinc, and a member of the Chemical Societies of London and the United States.

A notice of Mr. Miller is deferred to a future number of the BULLETIN.

MR. HOMER R. HIGLEY of the class of '92, and who held the post-graduate scholarship in Mathematics during the year '92-3 was the successful candidate for the professorship in Mathematics in the Platte Institute, Kearney, Nebraska. Both while in college and since, Mr. Higley made an excellent record in Mathematics, and there is no doubt that he will fill his new appointment creditably.

MR. ALBERT LEONARD of the class of '88, and who for five years was principal of the Dunkirk (N. Y.) High School has recently been called to a similar position in the city of Binghamton in the same State. This is regarded as one of the half dozen most desirable places in the Empire State, and the number of applicants was, in consequence, very large. It is a strong endorsement of Mr. Leonard's former success that he was chosen over so many competitors.

MR. ERNEST B. SKINNER of the same class will continue as instructor in the University of Wisconsin. For three years after his graduation he was a professor in Amity College, Iowa, and spent one year in post-graduate work in Clark University. Mrs. Skinner is a member of '85, O. U.

MR. LAWRENCE G. WORSTELL of '88, who was for some years engaged in teaching in Salt Lake City recently resigned his position and entered the law office of Grosvenor & Jones as a student. His wife was a member of '89, O. U.

MR. M. W. HENSEL of '93 has recently been elected Superintendent of the Schools of Blissfield, in the same State.

MR. SAMUEL K. MARDIS of '93 will resume the Superintendency of the schools of Gnadenhutten at an advanced salary. He resigned to enter the O. U. as a student.

MR. L. W. HOFFMAN of '90 who for the past two years had charge of the Brookfield Union Schools and Academy in New York will, next year, be engaged in a similar capacity in Warwick of the same State. This is an important promotion in every way and well deserved. Mr. H. delivered The Master's Oration at the last commencement.

MR. H. K. HOLCOMB of '92 who has for the past year been employed as instructor in Bookkeeping and Commercial Law in Amity College, Iowa, will continue at the same place next year at an increased salary. Mr. H. is not only well educated but possesses unusual skill with the pen.

MR. DOWD of '90 was recently graduated Doctor of Medicine and is now established in a successful practice at Dewey, Ill.

WE are informed that Mr. F. W. Bush of '92, who for the past year has been Principal of the McConnellsburg High School was recently offered a similar position in Indiana at an advanced salary. The Board, however, have arranged to retain his services another year. Mr. Bush has proved himself to be an efficient teacher.

THE following invitation received by several members of the Faculty is the record of an important event in the lives of two members of the class of '91:

Mr. and Mrs. Augustus Norton request the pleasure of your presence at the marriage of their daughter, Frances Johnson, to Mr. Samuel Cheney Price, Thursday noon, August tenth, eighteen hundred and ninety three, at their home, Sabot Hill, Sabot Island, Virginia.

Mr. Price is Principal of the High School, Mount Clemens, Mich.

THREE former students, graduates of the University, received the degree of Master at the recent Commencement for merit. Mr. C. E. Westervelt, who last year held the scholarship in English Literature, presented a thesis on Idealism and Realism in English Literature; Messrs. Conaway and Higley, both instructors in the University, read papers on The Interpretation of Historical Documents and on Jeffersonian Republicanism. All three showed wide reading and careful preparation.

MR. LEWIS M. GILLILAN of '91 has recently been appointed Principal of Salt Lake Seminary. For the past two years he was engaged in teaching in Nephi in the same Territory. His wife was a member of '86.

MR. JOHN A. SHOTT of '92, who has during the past year been Professor of Physics in the Lebanon Valley College will continue at the same place another year at an increased salary.

THERE will be several post-graduate students, resident and non-resident, the present year. Of '93, Mr. Mathews will pursue a course in philosophy; Miss Burns, one in English literature, and Mr. Kirkendall, one in history. This number is likely to be increased during the next

few months. As the faculty becomes larger and the number of branches in charge of each member lessened, more time will be at the disposal of each to be given to the special direction of students pursuing advanced subjects. Nothing is more indicative of the larger knowledge demanded by the times than the number of young people in the different colleges and universities who return after graduation to continue the studies which they believe they can pursue to the best advantage. Twenty years ago a post-graduate student was somewhat of a rarity; now they can be counted by hundreds, if not thousands.

MR. GEO. W. REED, of '88, who for several years was Superintendent of the Schools of Del Norte, Colorado, in addition to holding a professorship in the college in that city, has recently been elected to a position in the schools of Salt Lake City.

PRESIDENT SUPER'S History of the German Language was issued from the press a short time ago. It is an octavo of over 300 pages. Though based on the admirable little volume of Professor Behaghel, it contains a great deal of additional matter intended to bring the treatment within the comprehension of the average English reader. A good deal of the German work has also been omitted. The book is intended for readers who have not made a special study of either German or linguistic science in general.

THE following members of '93 will have charge of Township High Schools next year: Geo. A. Elliott, Clyde F. Beery, and Howard A. Wolford; the first named in Muskingum County, the second in Summit county, the third in Huron County.

THE Hon. H. S. Bundy, who was recently nominated for Congress after a long contest to succeed General Enochs, has been a Trustee of the O. U. since 1864. Two of the other candidates voted on, Messrs. Mathews and Fenton, had, like General Enochs, been students in the University in former years. The latter was also appointed a Trustee by Gov. McKinley.

THE FACULTY IS NOW CONSTITUTED AS FOLLOWS:

CHAS. W. SUPER, A. M., PH. D.,	President and Professor of Greek.
DAVID J. EVANS, A. M.,	Professor of Latin.
WILLIAM HOOVER, PH. D.,	Professor of Mathematics and Astronomy
JOHN P. GORDY, PH. D.,	Professor of Philosophy and Pedagogy.
HENRY E. CHAPIN, M. Sc.,	Professor of Biology and Geology.
WILLIS BOUGHTON, A. M.,	Professor of Rhetoric and English Literature.
JAMES E. LE ROSSIGNOL, PH. D.,	Professor of Psychology and Ethrics.
WALKER BOWMAN, A. M., PH. D.,	Professor of Chemistry.
ELI DUNKLE, A. M.,	Associate Professor of Greek and Principal of Preparatory.
ALBERT A. ATKINSON, B. PH.,	Associate Professor of Physics.
JOHN E. SNOW, B. S.,	Assistant Professor of Physics and Electric Engineering.
BREWSTER O. HIGLEY, M. PH.,	Assistant Professor of American History.
HORACE M. CONAWAY, A. M.,	Assistant Professor of Latin and European History.
CATHERINE A. FINLEY,	Instructor in Reading and Elocution.
KATE CRANZ,	Instructor in Modern Languages.
SARAH STINSON,	Instructor in Drawing and Painting.
MYRTLE STINSON,	Instructor in Music.
CHARLES M. COPELAND, A. B.,	Instructor in Commercial Branches.
MABEL K. BROWN, B. PH.,	Instructor in Stenography and Typewriting.
KATHARINE S. BURNS, A. B.,	Holder of Scholarship in English Literature.
CHARLES G. MATHEWS, B. S.,	Holder of Scholarship in Philosophy.
FRED E. C. KIRKENDALL, B. PED.,	Holder of Scholarship in History.

